

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



Scaled data based on original data using
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for
Cooper Lighting Solutions

Brand: NEO-RAY

Report Number: P914656

Luminaire Tested: DFN2DIP-SQ3F0-070D100US927-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P914656
REPORT IS A COMBINATION OF REPORTS P899975 AND P896733
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-070D100US927-FLLFLL
Description: 3 foot, Square Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

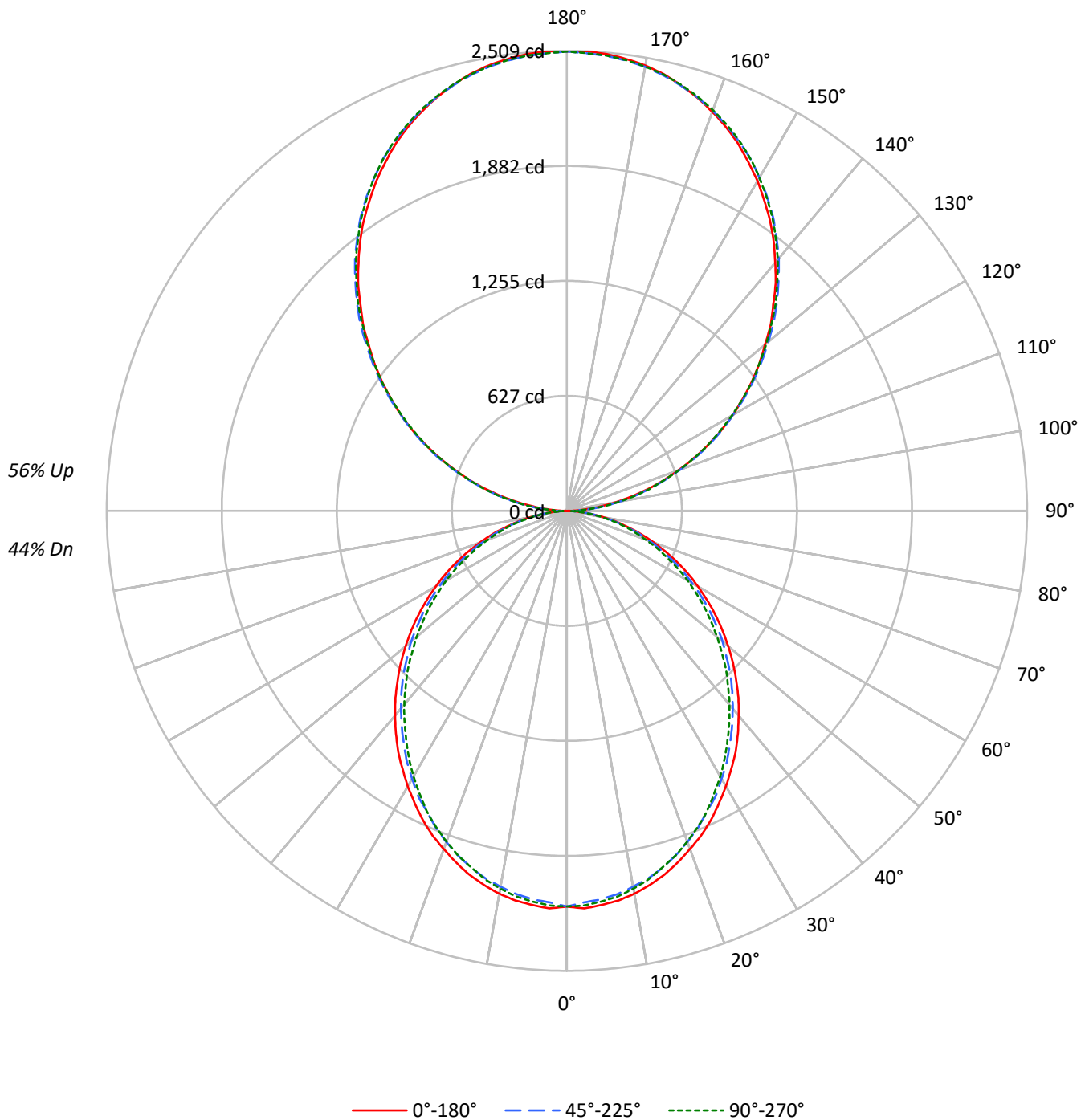
Lumens per Lamp: N/A
Luminaire Lumens: 12500.7 lumens
Efficiency: N/A
Efficacy: 87.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 143.1
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9963
Total Harmonic Distortion (THDi): 0.065
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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Luminous Intensity Polar Plot



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CATALOG NUMBER: DFN2DIP-SQ3F0-070D100US927-FLLFL

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20
RC	80				70				50				30				10
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
RCR																	
0	106	106	106	106	97	97	97	97	80	80	80	65	65	65	51	51	51
1	96	92	88	85	88	84	81	78	70	68	66	57	55	54	45	44	43
2	88	80	74	69	80	74	69	64	61	58	54	50	47	45	39	38	36
3	80	71	63	58	73	65	59	54	54	49	46	44	41	38	35	33	31
4	73	63	55	49	67	58	51	45	48	43	39	39	36	33	31	29	26
5	67	56	48	42	61	51	44	39	43	38	33	35	31	28	28	25	23
6	62	50	42	36	56	46	39	34	39	33	29	32	28	25	25	23	20
7	57	45	37	32	52	42	35	30	35	30	26	29	25	22	23	20	18
8	53	41	33	28	48	38	31	26	32	27	23	26	22	19	21	18	16
9	49	37	30	25	45	35	28	23	29	24	20	24	20	17	20	17	15
10	46	34	27	22	42	32	25	21	27	22	18	22	19	16	18	15	13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2472	2472	2472
5°	2475	2436	2453
10°	2453	2402	2419
15°	2415	2361	2367
20°	2365	2304	2313
25°	2315	2237	2251
30°	2253	2174	2172
35°	2193	2100	2088
40°	2121	2025	2009
45°	2048	1951	1927
50°	1969	1872	1833
55°	1885	1781	1746
60°	1791	1673	1647
65°	1688	1561	1530
70°	1557	1425	1404
75°	1375	1261	1286
80°	1156	1052	1062
85°	814	697	695

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2522 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	203.1	1.6
10°-20°	571.4	4.6
20°-30°	839.7	6.7
30°-40°	975.3	7.8
40°-50°	974.1	7.8
50°-60°	849.4	6.8
60°-70°	627.9	5.0
70°-80°	355.2	2.8
80°-90°	100.9	0.8
90°-100°	155.0	1.2
100°-110°	492.6	3.9
110°-120°	843.0	6.7
120°-130°	1108.6	8.9
130°-140°	1244.4	10.0
140°-150°	1220.3	9.8
150°-160°	1023.6	8.2
160°-170°	678.9	5.4
170°-180°	237.3	1.9
0°-30°	1614.2	12.9
0°-40°	2589.5	20.7
0°-60°	4412.9	35.3
0°-90°	5497.0	44.0
90°-120°	1490.6	11.9
90°-150°	5063.9	40.5
90°-180°	7004.0	56.0
0°-180°	12500.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2158	2158	2158	2158	2158	
5°	2158	2150	2127	2143	2139	205
15°	2054	2042	2015	2023	2013	578
25°	1859	1842	1807	1811	1807	855
35°	1604	1583	1550	1537	1527	1002
45°	1305	1291	1259	1237	1228	1007
55°	988	975	950	925	915	883
65°	666	654	633	614	604	659
75°	348	344	334	322	326	372
85°	85	83	81	75	73	95
90°	2	27	74	70	72	12
95°	110	131	135	135	131	123
105°	455	461	465	469	469	480
115°	846	858	854	852	846	837
125°	1230	1249	1243	1236	1234	1100
135°	1591	1615	1619	1617	1611	1230
145°	1932	1947	1959	1962	1953	1207
155°	2209	2215	2222	2233	2226	1017
165°	2403	2401	2401	2416	2406	678
175°	2501	2495	2490	2505	2492	238
180°	2505	2505	2505	2505	2505	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2157.7	2157.7	2157.7	2157.7	2157.7
2.5°	2170.3	2159.9	2137.0	2157.7	2153.7
5°	2157.7	2149.6	2126.7	2143.2	2139.2
7.5°	2143.2	2130.8	2107.9	2124.7	2120.5
10°	2120.5	2105.9	2081.1	2097.6	2091.4
12.5°	2089.2	2076.9	2052.1	2062.4	2058.2
15°	2054.0	2041.7	2014.6	2023.0	2012.6
17.5°	2010.4	1998.1	1971.0	1981.4	1971.0
20°	1962.6	1950.4	1921.3	1927.5	1919.3
22.5°	1915.1	1896.4	1869.3	1869.3	1865.1
25°	1859.0	1842.5	1807.3	1811.2	1807.3
27.5°	1796.7	1782.2	1755.3	1749.1	1738.8
30°	1734.6	1717.8	1686.9	1680.7	1672.3
32.5°	1668.1	1655.8	1622.5	1610.0	1601.6
35°	1603.8	1583.2	1549.9	1537.4	1527.0
37.5°	1531.2	1512.5	1479.2	1464.7	1454.4
40°	1456.6	1439.9	1406.6	1388.1	1379.7
42.5°	1383.9	1367.2	1334.2	1313.3	1300.9
45°	1305.1	1290.6	1259.3	1236.7	1228.3
47.5°	1228.3	1213.8	1180.5	1157.6	1145.3
50°	1147.3	1136.9	1107.9	1078.9	1068.5
52.5°	1068.5	1054.0	1027.1	1004.2	989.7
55°	987.7	975.2	950.3	925.4	915.0
57.5°	906.7	896.4	869.3	844.4	836.1
60°	825.7	817.5	788.5	765.6	759.5
62.5°	746.9	732.4	711.7	691.0	682.6
65°	666.1	653.5	632.9	614.2	603.8
67.5°	583.1	572.6	554.1	539.6	531.2
70°	506.3	498.0	479.2	464.7	456.5
72.5°	427.5	419.1	408.8	394.3	388.1
75°	348.5	344.5	333.9	321.6	325.8
77.5°	278.1	269.7	265.5	259.3	253.2
80°	207.6	205.4	201.2	195.0	190.8
82.5°	141.1	141.1	139.1	130.8	130.8
85°	85.0	83.0	81.0	74.6	72.6
87.5°	37.4	33.3	29.1	22.9	20.7
90°	2.3	27.2	74.0	69.5	71.8
92.5°	46.8	63.5	65.8	68.0	68.0
95°	110.3	131.4	135.2	135.2	131.4
97.5°	183.5	203.2	211.5	211.5	211.5
100°	268.2	285.5	291.5	291.5	289.3
102.5°	357.3	370.1	378.4	380.6	378.4
105°	454.7	460.7	465.2	469.1	469.1
107.5°	551.4	560.5	560.5	562.0	551.4
110°	645.1	657.1	657.1	657.1	651.1

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	746.2	759.1	756.8	750.8	746.2
115°	846.0	858.0	854.3	852.0	846.0
117.5°	944.9	961.5	950.9	944.9	938.8
120°	1044.6	1061.2	1044.6	1044.6	1037.8
122.5°	1135.2	1156.3	1145.8	1139.8	1135.2
125°	1230.4	1249.3	1243.2	1236.4	1234.2
127.5°	1323.3	1346.7	1338.4	1329.4	1323.3
130°	1410.2	1437.3	1433.6	1429.0	1420.8
132.5°	1507.6	1528.8	1530.3	1519.7	1513.6
135°	1591.4	1614.9	1619.4	1617.2	1611.1
137.5°	1685.1	1704.0	1707.8	1706.3	1697.2
140°	1767.4	1786.3	1796.9	1796.9	1788.6
142.5°	1852.0	1870.9	1876.9	1879.2	1870.9
145°	1932.1	1947.2	1959.3	1961.5	1953.2
147.5°	2003.8	2022.8	2031.8	2035.6	2027.3
150°	2077.9	2090.7	2099.0	2105.8	2099.0
152.5°	2143.6	2156.4	2167.0	2175.3	2167.0
155°	2209.3	2215.3	2222.1	2232.7	2225.9
157.5°	2266.0	2270.5	2274.3	2289.3	2278.8
160°	2316.6	2321.1	2323.3	2336.1	2327.1
162.5°	2363.4	2363.4	2365.6	2379.9	2369.4
165°	2403.4	2401.1	2401.1	2416.2	2405.7
167.5°	2439.7	2432.9	2432.9	2448.0	2437.4
170°	2466.9	2460.8	2458.5	2473.7	2460.8
172.5°	2485.7	2479.7	2477.4	2492.5	2479.7
175°	2500.8	2494.8	2490.3	2505.4	2492.5
177.5°	2509.2	2503.1	2498.5	2511.4	2498.5
180°	2505.4	2505.4	2505.4	2505.4	2505.4

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CIE UGR TABLE:

Reflectances:											
Ceiling		0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3
Wall		0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3
Reference plane		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Room dimensions		Viewed crosswise					Viewed endwise				
X=2H	Y=2H	9.80	10.61	10.80	11.62	12.98	9.35	10.16	10.36	11.18	12.53
	3H	11.45	12.17	12.47	13.20	14.58	10.96	11.68	11.98	12.71	14.09
	4H	12.03	12.72	13.06	13.75	15.13	11.54	12.22	12.57	13.25	14.64
	6H	12.42	13.06	13.47	14.09	15.49	11.92	12.56	12.96	13.59	14.99
	8H	12.53	13.13	13.57	14.18	15.57	12.02	12.63	13.07	13.68	15.07
	12H	12.57	13.14	13.62	14.19	15.60	12.06	12.63	13.11	13.68	15.09
4H	2H	10.25	10.94	11.28	11.96	13.35	9.89	10.58	10.93	11.61	12.99
	3H	12.10	12.68	13.15	13.73	15.13	11.70	12.27	12.74	13.33	14.72
	4H	12.81	13.34	13.86	14.39	15.80	12.39	12.91	13.44	13.96	15.38
	6H	13.32	13.77	14.38	14.84	16.26	12.89	13.34	13.95	14.41	15.82
	8H	13.47	13.89	14.53	14.95	16.38	13.03	13.45	14.09	14.52	15.94
	12H	13.53	13.92	14.61	14.99	16.43	13.09	13.47	14.16	14.55	15.98
8H	4H	13.00	13.42	14.06	14.49	15.92	12.62	13.05	13.68	14.11	15.54
	6H	13.62	13.97	14.71	15.08	16.50	13.24	13.59	14.32	14.69	16.12
	8H	13.84	14.15	14.93	15.24	16.68	13.45	13.75	14.54	14.84	16.29
	12H	13.97	14.24	15.06	15.32	16.81	13.55	13.82	14.65	14.91	16.39
12H	4H	12.98	13.36	14.06	14.44	15.88	12.61	13.00	13.69	14.07	15.51
	6H	13.65	13.96	14.74	15.05	16.49	13.28	13.59	14.37	14.67	16.12
	8H	13.89	14.16	14.98	15.24	16.73	13.51	13.78	14.60	14.86	16.35